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Correlative light and electron microscopy : strategies and applications

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Correlative Light and Electron Microscopy: Strategies and Applications

Linda Francina van Driel

Correlative Light and Electron Microscopy: Strategies and Applications

Linda F. van Driel

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Cover: Overlay of a cryo-fluorescence image and a section of a cryo-electron tomogram. The images show an actin ring that has assembled in in vitro stimulated pancreatic homogenate (see chapter 5).

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List of Abbreviations

ACG	Actin coated granule
APD	Avalanche photo diode
ATP	Adenosine triphosphate
cAMP	Cyclic adenosine monophosphate
CCV	Clathrin Coated Vesicle
CFP	Cyan fluorescent protein
CLEM	Correlative light and electron microscopy
DAB	3,3-diaminobenzidine
DAG	Diacylglycerol
DMEM	Dulbecco's modified eagle medium
DMSO	Dimethylsulfoxide
DNA	Deoxyribonucleic acid
DNase	Deoxyribonuclease
ECIM	Endothelial cell incubation medium
EDC	1-ethyl-3-(3-dimethylaminopropyl) carbodiimide
EGFP	Enhanced GFP
ELISA	Enzyme-linked immunosorbent assay
EM	Electron microscopy
ER	Endoplasmatic reticulum
F-actin	Filamentous actin
FEG	Field emission gun
FIB	Focused ion beam
FM	Fluorescence microscopy
FRET	Fluorescence resonance energy transfer
FS	Freeze substitution
FWHM	Full width at half maximum
G-actin	Globular actin
GFP	Green fluorescent protein
GTP	Guanosine triphosphate
GTP _γ s	Guanosine 5'-O-[gamma-thio]triphosphate
HEPES	4-(2-hydroxyethyl)-1-piperazineethanesulfonic acid
HPF	High pressure freezer
HRP	Horse radish peroxidase

HUVEC	Human umbilical vein endothelial cells
ILEM	Integrated light and electron microscope
LCOTRAS	Leiden coordinate translation script
LM	Light microscopy
LSFM	Laser scanning fluorescence microscope
LUMC	Leiden University Medical Center
MEF	Mouse embryonic fibroblasts
miniSOG	mini Singlet Oxygen Generator
NA	Numerical aperture
PALM	Photo-activated localization microscopy
PBS	Phosphate buffered saline
PDE	Photon detection efficiency
PMA	Phorbol 12-myristate 13-acetate
PFA	Paraformaldehyde
PLT	Progressive lowering of temperature
PNS	Postnuclear supernatant
QD	Quantum dots
RFP	Red fluorescent protein
RNA	Ribonucleic acid
RNase	Ribonuclease
RT	Room temperature
SBF	Serial Block Face
SEM	Scanning Electron Microscopy
SNAP	Soluble <i>N</i> -ethylmaleimide-sensitive fusion protein attachment protein
SP	Secretory pod
STED	Stimulated emission depletion
STEM	Scanning transmission electron microscopy
STORM	Stochastic optical reconstruction microscopy
TEM	Transmission electron microscopy
TIRF	Total internal reflection
TGN	Trans-Golgi network
VWF	Von Willebrand factor
WGA	Wheat-germ agglutinin
WPB	Weibel-Palade bodies
YFP	Yellow fluorescent protein